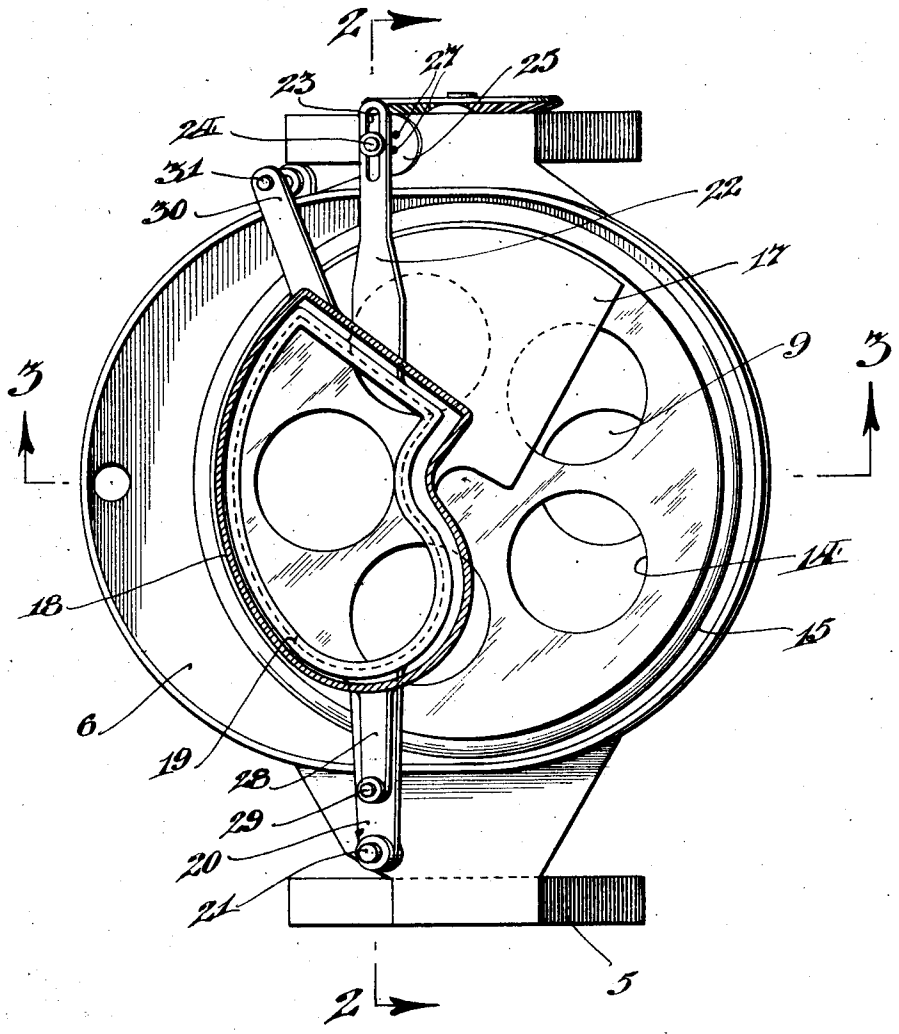
Feb. 19, 1929. 1,702,887

C. H. AYARS

CAN FILLING MACHINE

Filed March 24, 1927 2 Sheets-Sheet 1

FIG. 1.



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FIG. 2.

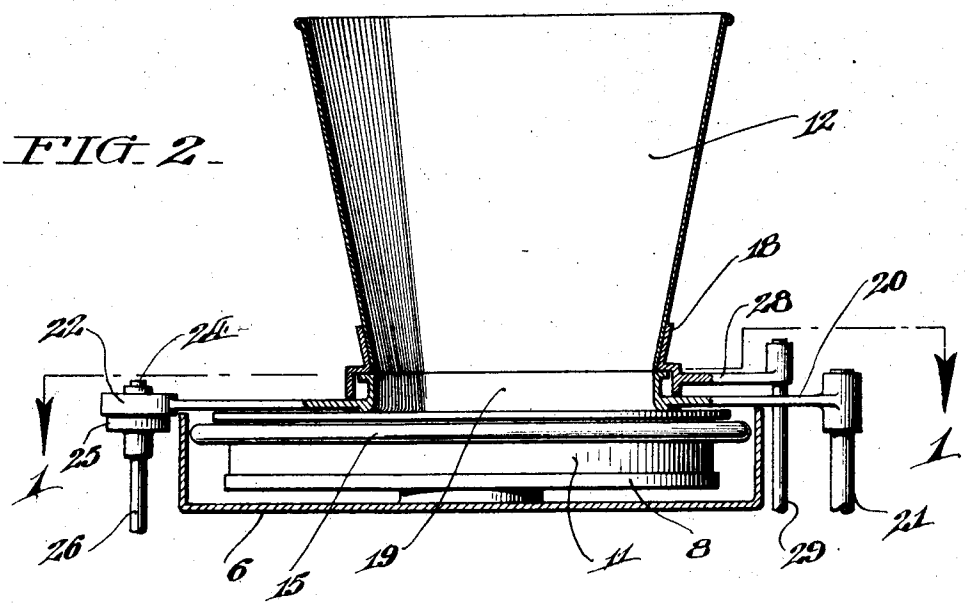
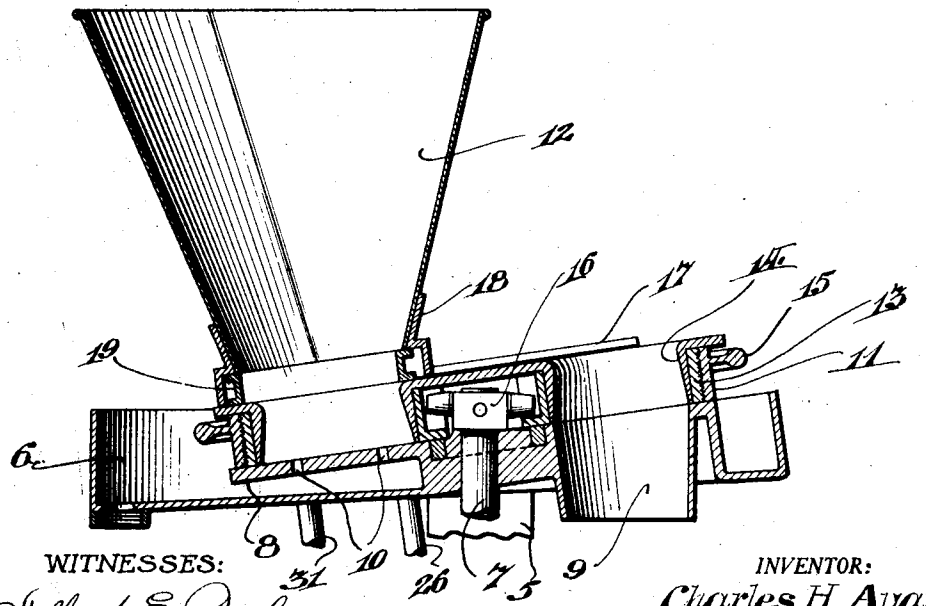


FIG. 3.



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UNITED STATES PATENT OFFICE.

CHARLES H. AYARS, OF SALEM, NEW JERSEY.

CAN-FILLING MACHINE.

Application filed March 24, 1927. Serial No. 177,869.

My invention relates to canning machinery and more particularly to means for agitating the material contained in the hopper of a can filling machine, such as the one illustrated and described in Patent No. 1,480,335, issued to me on January 8, 1924.

In canning certain materials, it is necessary to agitate or revolve the hopper in order to prevent the material from clogging therein and, in the case of soft and tender materials, such agitation must be gentle but positive in order to insure a full pack without injury to the material.

The principal object of my invention is to provide means for agitating the material immediately above the measuring receptacles so that they are positively filled while the material being canned is agitated only while passing through the agitating device. In this manner, the material in the main part of the hopper moves downwardly without being agitated and thus is not mutilated or bruised.

Another object of my invention is to so design its structure that juices will be confined to the interior of the machine and its parts be readily accessible for cleaning and inspection.

These objects, and other advantageous ends which will be described hereinafter, I attain in the following manner, reference being had to the accompanying drawings in which the invention is shown applied to the machine illustrated and described in Patent No. 1,490,355.

Figure 1 being a top plan view of a canning machine embodying my invention with the hopper omitted and the hopper flange shown in section; the view being taken substantially on line 1—1 on Figure 2.

Figure 2 is a fragmentary vertical section on line 2—2 on Figure 1 but showing certain parts in full, and

Figure 3 a fragmentary vertical section on line 3—3 on Figure 1.

Referring now more in detail to the drawings, in which only such parts of a can filling machine have been shown as are necessary to illustrate the application of my invention to such machine, 5 represents a suitable frame which carries a liquid tank 6 and has a shaft 7 rotatable near its center. A bed plate 8 is mounted in tank 6, extending upwardly at an angle to a horizontal plane, and is provided with a discharge opening 9, extending through the bottom of tank 6, and a plurality of small holes 10 which are adapted to allow juices to pass through the bed plate into tank 6. The upper surface of bed plate 8 is machined to a smooth finish and provides a suitable bearing for the bottom of a measuring wheel 11 which is adapted to rotate thereon and to carry measured quantities of material from the hopper 12 to discharge opening 9.

Measuring wheel 11 is composed of a lower section having a plurality of measuring cups 13 and an upper section having a plurality of cups 14 telescoping into cups 13 and is adapted to be moved upwardly or downwardly by means of a hand wheel 15 threaded to the outside of the lower section of the measuring wheel. Measuring wheel 11 is rotated by shaft 7 which is provided with an angular head 16 engaging the lower section of the wheel.

A hopper plate 17 rests on measuring wheel 11 and is provided with an upturned flange 18 to which hopper 12 is secured; the greater part of the weight of hopper plate 17 and hopper 12 being carried by a flanged agitator 19 which rests on the top of measuring wheel 11 and all contacting surfaces are machined so as to provide liquid-tight joints between the hopper and the agitator and between the agitator and the measuring wheel.

Agitator 19 is provided with an arm 20, extending through a suitable slot in flange 18 and pivoted to frame 5 at 21, and with an arm 22 which extends through another slot in flange 18 and is provided at its outer end with a slot 23. A pin 24 extends through slot 23 and is eccentrically mounted in a disk 25, secured to the top of a shaft 26 rotatably mounted in frame 5. It is evident that rotation of shaft 26 will rock agitator 19 on pivot 21 and, in order to regulate the degree of agitation, I provide a plurality of holes 27 in disk 25 disposed at different distances from its center and adapted to receive pin 24, so that the degree of agitation may be regulated by placing pin 24 in a hole 27 nearer to or farther from the center of disk 25. Arms 20 and 22 also prevent agitator 19 from being displaced by the rotation of measuring wheel 11.

In order to prevent hopper 12 from moving, I form an arm 28 integral with flange 18 and secure its outer end to frame 5 by passing a rod 29 through a slot in arm 20 and securing its ends to arm 28 and frame 5 respectively.

A second arm 30 is formed integral with flange 18 and secured to frame 5 by means of a rod 31.

Agitator 19 is especially adapted for use with soft fruit which must be gently dealt with. Its inner face, which is the only part which contacts with the fruit, is therefore smooth and free from any inwardly or upwardly projecting fingers or projections. Its inner wall is perpendicular instead of being inclined to correspond with that of the hopper thereby affording more space than the discharge end of the hopper and less resistance to passage of the fruit. Its lower edge is beveled and, therefore, when the agitator is reciprocated, tends to press the fruit downwardly into the measuring cup.

In operating the machine, the material to be canned is placed in hopper 12 and power applied to the machine in the usual manner so that measuring wheel 11 will rotate and arm 22 be agitated by disk 25. The material will move downwardly in hopper 11 into the measuring cups which will rotate until they come into alignment with discharge opening 9 where their contents will be directed into cans fed thereunder in the well known manner.

As arm 22 is being constantly agitated, agitator 19 will move to and fro within the limits defined by disk 25, preventing the material in the hopper from clogging and gently but positively forcing same into the measuring cups. The material above agitator 19 will move downwardly due to the agitation of the material underneath it but will be neither bruised nor mutilated by any agitation. In passing through agitator 19, the material is agitated sufficiently to cause it to pass therethrough, but not sufficiently to suffer any damage, particularly as agitator 19 is preferably shallow relatively to the height of hopper 12.

In thus using the machine, I find material that is extremely tender or very soft may be canned without any injury thereto and that my improved machine assures a uniform and first class pack.

While I produce canning machines having fixed hoppers, rotatable hoppers and agitating hoppers, I find that the machine above described fills a need that has long been felt in the trade as it possesses peculiar advantages over any machines heretofore produced and, while I have illustrated and described it in conjunction with a particular canning machine, it will be readily understood that it may be applied to other types of machines and that certain modifications might be made without departing from the spirit of the invention, and hence I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a can filling mechanism having movable measuring cups, a hopper base, a hopper carried thereby, and an annular agitator disposed above the path of travel of the measuring cups and making a close joint with the hopper, the agitator having a smooth interior and having its lower edge beveled.

2. In a can filling machine having movable measuring cups; an agitator resting on the measuring cups, a hopper resting on the agitator, and means for actuating the agitator.

3. In a can filling machine having movable measuring cups; an agitator resting on the measuring cups, a hopper resting on the agitator, liquid tight joints formed between the hopper and the agitator and between the agitator and the measuring cups, and means for actuating the agitator.

4. In a can filling machine having movable measuring cups; a hopper plate disposed above the cups, a flange on the hopper plate, an agitator within the flange and resting on the measuring cups, a hopper secured to the flange and resting on the agitator, and means for actuating the agitator.

5. In a can filling machine having a frame and measuring cups movable in the frame; a hopper plate disposed above the cups, a flange on the hopper plate, an agitator within the flange and resting on the measuring cups, a hopper secured to the flange and resting on the agitator, arms extending from the flange and secured to the frame for holding the hopper against displacement.

6. In a can filling machine having a frame and measuring cups movable in the frame; a hopper plate disposed above the cups, a flange on the hopper plate, an agitator within the flange and resting on the measuring cups, a hopper secured to the flange and resting on the agitator, an arm fixed to the agitator and pivoted to the frame, a second arm fixed to the agitator and connected to an eccentric, and means for actuating the eccentric.

In testimony whereof I have signed my name to this specification.

CHARLES H. AYARS.